

# Work Order ID 43516

June 26, 2009 10:39:05 AM



Page 1

Item ID: D350-748-201

Accept



Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

*See attached approval*

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

N/A

Rev D

100



0.00

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPPD350-748-201

CHG001

110



0.00

CNC Bend 2

BENDING MACHINE - CROSSTUBES

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D350-748-241 using CNC bender program D350A and Folio FT

120



0.00

QC

QC15- Crosstube Dimensional Check

Memo

0.00

Quality Control

*Scrap*

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Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130



Crosstubes

Crosstubes

Crosstubes

Memo

0.00

0.00

1-Drill Tube as per Dwg D350-748-241 Using DT8876 Drill Jigs, Set-up  
drill table as per QSI 010112-Debur113-Engrave Part # and Batch # as per Dwg  
D350-748-241114-Remove all marks from tube within limits of D350-748-  
241115- Apply a light coat of LPS3 on t

140



QC

Quality Control

QC6- Inspect dimensions to drawing

Memo

0.00

0.00

150



Outsource3

Outsource process - Cad plate

Outsource process-Cadplate per QSI017 4.1.9.1

Memo

0.00

0.00

Issue P/O: \_\_\_\_\_ Stress relief at 375° for 5 hours11Magnetic  
Particle Inspect per ASTM E144411Cadium Plate per AMS-QQ-P-416B, Class  
1, Type 211Embrittle relief at 375° for 8 hours, Chromate Treat11Possibe  
Supplier: Southwest United Industries11Ens

SCV AP

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Required Date: 03/08/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160



Packaging

Receive & Inspect for Damage & Mat'l Certs

0.00

Memo

0.00

Packaging

Ensure certificate of conformity is attached

170



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

180



SprayPaint

Spray Painting

SprayPaint

0.00

Memo

0.00

1-Prime inside crosstube as per QSI 005 4.2: 2-Paint Outside of Tube as per  
Dart QSI 005 4.2

SCVMP

# Work Order ID 43516

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Item ID: D350-748-201

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Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

190



QC

Quality Control

QC14- Inspect Spray Paint

0.00

Memo

0.00

Then, Wrap in plastic bag to protect from scratches

200



Crosstubes

Crosstubes

Crosstubes

0.00

Memo

0.00

1-Install Ground wire Insert, then insert screw and washer. 2-Install Abrasion strips as per Dwg D350-748-241 & QSI 035. 3-Install supports Using Dt8876 as per Dwg D350-748-241, Torque to 60-80 IN-LBS

210



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

SCVAP

# Work Order ID 43516

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Item ID: D350-748-201

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Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

220



Packaging

Pick Kit

0.00

Memo

0.00

Packaging

230



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

Memo

0.00

240



Packaging

Packaging

Packaging

0.00

Memo

0.00

Identify and pack for shipping as per PPP D350-748-  
201 Location: \_\_\_\_\_ PPP Rev: \_\_\_\_\_

## WORK ORDER CHANGES

W/O:		PROCEDURE CHANGE	By	Date	Qty	Approval	Approval
DATE	STEP					Chief Eng / Prod Mgr	QC Inspector
09-08-13	230	Kit is missing-D3500-1 shackles. please add per I.I.N. 01/14 - A24-41A bolt Qty 8 ! change MS21042L-5 Nut from Rev 120 to 230 perm change	E	09.08.14		0908-13	0908-13
09-08-13	W/O launcher	Add <del>I.I.N.</del> Dwg D350-748-241 to dwg box. perm change	E	09.08.14		0908-13	0908-13

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE (NCR)

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Work Order ID 43516

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Item ID: D350-748-201

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Setup Start



Revision ID: D

Stop



Item Name: Crosstube Installation, High Aft

Start Date: 15/07/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

250

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

08-08-13  
MF 09-08-11

# Picklist Print

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Work Order ID: 43516

Parent Item: D350-748-201RevD

Parent Item Name: Crosstube Installation, High Aft










Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ MS21042L5 		Purchased	No			120 120	Each	0.0000	4.0000			
Nut												
✓ ALS4-1032-225 		Purchased	No			200	Each	0.0000	1.0000			
Insert												
✓ AN960JD10 		Purchased	No			200	Each	0.0000	1.0000			
Washer												
✓ D2856-400RevA 		Manufactured	No			200	f	0.0000	1.2432			
Abraison Strip												
✓ D350-748- 241TRNRevD 		Manufactured	No			200	Each	0.0000	1.0000			
Crosstube Turning Detail												
✓ MS21920-20 		Purchased	No			200	Each	0.0000	2.0000			
Clamp (per MIL-DTL-8783C)												
✓ MS27039-1-10 		Purchased	No			200	Each	0.0000	1.0000			
Screw												
✓ AN4-6A 		Purchased	No			230	Each	0.0000	16.0000			
Bolt												
✓ AN5-32A 		Purchased	No			230	Each	0.0000	4.0000			
Bolt												

SCV 14P



# Picklist Print

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Work Order ID: 43516

Parent Item: D350-748-201RevD

Parent Item Name: Crosstube Installation, High Aft

Comments:



Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ AN960JD416 		Purchased	No			230	Each	0.0000	32.0000 			
Washer												
✓ AN960JD516 		Purchased	No			230	Each	0.0000	8.0000 			
Washer												
✓ D3501-1RevA 		Manufactured	No			230	Each	0.0000	16.0000 			
Bushing												
✓ D3502-1RevB 		Manufactured	No			230	Each	0.0000	2.0000 			
Support												
✓ MS21042L4 		Purchased	No			230	Each	0.0000	24.0000 			
Nut												



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Shop Packet Print

Page 2

Date: Tuesday, 18/11/2008 8:45:46 AM  
 User: Julie Dawson

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services  
 Job Number : 43516  
 Estimate Number : 12486  
 P.O. Number :  
 This Issue : 18/11/2008 S.O. No. :  
 Prsht Rev. : NC  
 First Issue : / / Type : CROSSTUBES  
 Previous Run : 43515  
 Drawing Name : 350/355 AS X-TUBE AFT  
 Part Number : D350748201  
 Drawing Number : N/A  
 Project Number : N/A  
 Drawing Revision : D  
 Material :  
 Due Date : 05/12/2008 Qty: 1 Um: Each  
 Written By :  
 Checked & Approved By : JLD 08.11.18  
 Comment : Est Rev: A New Issue 06-07-05 JLM  
 Est Rev: B Update qty of MS21042L5 06-09-12 KJ  
 Est Rev C Combined manufacturing 08.04.02 EC verified by:  
 DD  
 Est Rev:D 08-06-24 revD as per dwg DD verified by:EC

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
1.0	DC	DOCUMENT CONTROL
✓		
Comment: Photocopy bluefile & type labels per PPPD350-748-201 CHG001		
2.0	D350748241TRN	Crosstube Turning Detail
✓		
Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) CROSSTUBE TURNING DETAIL batch <u>B43673</u> <u>DP</u> <u>9-2-2</u>		
3.0	BENDING	BENDING MACHINE - SKIDTUBES
✓		
Comment: BENDING MACHINE Bend tube as per Dwg D350-748-241 using CNC bender program D350A and Folio FT <u>DP 9-2-2</u>		
4.0	QC15	DIMENSIONAL CHECK OF X-TUBES
✓		
Comment: DIMENSIONAL CHECK OF X-TUBES		
5.0	CROSSTUBES	CROSSTUBES RESOURCE 1
✓		
Comment: LANDING GEAR RESOURCE 1 1-Remove all marks from tube within limits of D350-748-241  2-Drill Tube as per Dwg D350-748-241 Using DT8876 Drill Jigs, Set-up drill table as per QSI 010		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-748-201 PAR #: N/A Fault Category: Skid tube NCR: Yes No DQA: / Date: 09.08.14  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: / Date: 08.06.17

NCR: <u>43516</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>09.02.17</u>	<u>3.0</u>	Tube has deep wrinkles on the inside bend radius, 3" long. Tube is scrap.  RC: process.	<u>[Signature]</u> <u>09/08/07</u> <u>0542</u>	Scrap tube. I.D tube for lab testing i. Show use only. Place in back shed.	<u>[Signature]</u> <u>9-08-11</u>	<u>[Signature]</u> <u>09.08.11</u>	<u>[Signature]</u> <u>09/08/07</u> <u>0542</u>	<u>09.08.05</u> <u>[Signature]</u>

NOTE: Date & initial all entries

Date: Tuesday, 18/11/2008 8:45:47 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 43516

Part Number: D350748201

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

3-Deburr

4-Engrave Part # and Batch # as per Dwg D350-748-241

6.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

7.0

OUTSIDE SERV.10

OUTSIDE SERVICES -skids



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: \_\_\_\_\_

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

*Scrap*

8.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformity is attached

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside crosstube as per QSI 005 4.2

2-Paint Outside of Tube as per Dart QSI 005 4.2

11.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 18/11/2008 8:45:47 AM  
User: Julie Dawson.

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 43516

Part Number: D350748201

Job Number:



Seq. #:	Machine Or Operation:	Description :
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12.0	D2856400	Abraison Strip
------	----------	----------------



Comment: Qty.: 1.2401 f(s)/Unit Total : 1.2401 f(s)

Abrasion Strip 7.10" long x2

Batch: \_\_\_\_\_

13.0	ALS41032225	Insert
------	-------------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Insert

Batch: \_\_\_\_\_

14.0	AN960JD10	Washer
------	-----------	--------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Washer

Batch: \_\_\_\_\_

15.0	MS219202Q	Clamp (per MIL-DTL-8783C)
------	-----------	---------------------------



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Clamp (per MIL-DTL-8783C)

Batch: \_\_\_\_\_

16.0	MS27039110	Screw
------	------------	-------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Screw

Batch: \_\_\_\_\_

17.0	CROSSTUBES	CROSSTUBES RESOURCE 1
------	------------	-----------------------



Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert then insert screw and washer

2-Install Abrasion strips as per Dwg D350-748-241 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-241, Torque to 60-80 IN-LBS

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 18/11/2008 8:45:47 AM  
User: Julie Dawson.

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 43516

Part Number: D350748201

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

19.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Pick Packing Kit

20.0

D35001

Saddle



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
350 SADDLE  
Batch: \_\_\_\_\_

See P10

21.0

D35021

Support



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
SUPPORT  
Batch: \_\_\_\_\_

Scrap

22.0

D35011

Bushing



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)  
BUSHING  
Batch: \_\_\_\_\_

23.0

AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)  
Bolt  
Batch: \_\_\_\_\_

24.0

AN441A

bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)  
bolt  
Batch: \_\_\_\_\_

See P10



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 18/11/2008 8:45:47 AM  
User: Julie Dawson.

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 43516

Part Number: D350748201

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

25.0	AN532A	Bolt
------	--------	------



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: \_\_\_\_\_

26.0	AN960JD416	Washer
------	------------	--------



Comment: Qty.: 32.0000 Each(s)/Unit Total : 32.0000 Each(s)

Washer

Batch: \_\_\_\_\_

27.0	AN960JD516	Washer
------	------------	--------



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: \_\_\_\_\_

28.0	MS21042L4	Nut
------	-----------	-----



Comment: Qty.: 24.0000 Each(s)/Unit Total : 24.0000 Each(s)

Nut

Batch: \_\_\_\_\_

29.0	MS21042L5	Nut
------	-----------	-----



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Nut

Batch: \_\_\_\_\_

30.0	QC4	INSPECT 100% KITS FOR COMPLETENESS
------	-----	------------------------------------



Comment: INSPECT 100% KITS FOR COMPLETENESS

31.0	PACKAGING 1	PACKAGING RESOURCE #1
------	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-201

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 18/11/2008 8:45:47 AM  
User: Julie Dawson

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUB

Job Number: 43516

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



Scrap.

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

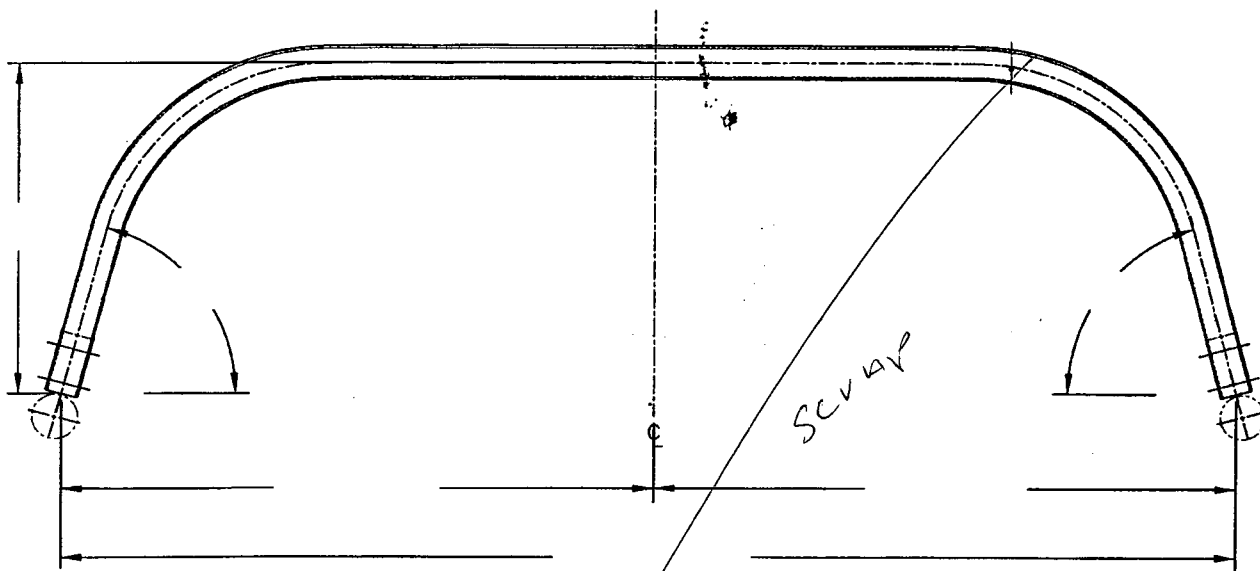
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action		Section B		Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date				

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 43516
<b>Description:</b> Crosstube High Aft (AS350/355)		<b>Part Number:</b> D350-748-201
<b>Inspection Dwg:</b> D350-748-241 <b>Rev:</b> D		<b>Page 1 of 1</b>

Required Dimension	Min	Max
Height	31.22	31.48
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.54	82.06



Comments

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	<i>[Signature]</i>

## 5.0 PARTS LIST

Qty -101	Qty -201	Part Number	Description
X		D350-748-101	CROSSTUBE INSTALLATION, AS 350/355 HIGH FWD
	X	D350-748-201	CROSSTUBE INSTALLATION, AS 350/355 HIGH AFT
1		D350-748-141	CROSSTUBE ASSEMBLY, AS 350/355 HIGH FWD
	1	D350-748-241	CROSSTUBE ASSEMBLY, AS 350/355 HIGH AFT
*2	*2	D3502-1	SUPPORT
*2	*2	D2856-400-710	ABRASION STRIP
*1	*1	AELS-1032-225	INSERT
*2	*2	MS21920-20	CLAMP
*1	*1	MS27039-1-10	SCREW
*1	*1	AN960JD10	WASHER
4	4	D3500-1	SADDLE <i>Add</i>
16	16	D3501-1	BUSHING
16	16	AN4-6A	BOLT
8	8	AN4-41A	BOLT <i>Add</i>
4	4	AN5-32A	BOLT
32	32	AN960JD416	WASHER
8	8	AN960JD516	WASHER
24	24	MS21042L4	NUT (OR MS21042-4)
4	4	MS21042L5	NUT (OR MS21042-5)

\* REFERENCE ONLY. PARTS ARE INCLUDED IN D350-748-141/241 ASSEMBLIES ABOVE

REFERENCE ONLY

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Revision: B

Date: 07.06.15

**DART****RELEASED**

06.10.31

DESIGN <i>qp</i>	DRAWN BY <i>qp</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>HH</i>	APPROVED <i>HH</i>	DRAWING NO. D350-748-241	REV. D SHEET 1 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT)	SCALE NTS
A	06.03.31	NEW ISSUE	
B	06.06.30	ADD D6018-125 & PRIME AND PAINT	
C	06.08.14	ADD CAD PLATING	
D	06.10.31	MAG. PARTICLE AND CAD PLATE AS MFD.	

QTY	P/N	DESCRIPTION
X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
1	D6018-125	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

**D350-748-141 CROSSTUBE:**

- 1) MATERIAL: MANUFACTURED FROM D6018-125 OR D6015-125  
FINISHED LENGTH = 122.70±0.06
- 2) MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 3) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS
- 4) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 5) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING
- 6) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2  
CADIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 7) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 8) INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 9) TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
- 10) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 11) ALL DIMENSIONS ARE IN INCHES
- 12) PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR Ø0.297 HOLE.

**UNDER REVIEW**

07.02/16

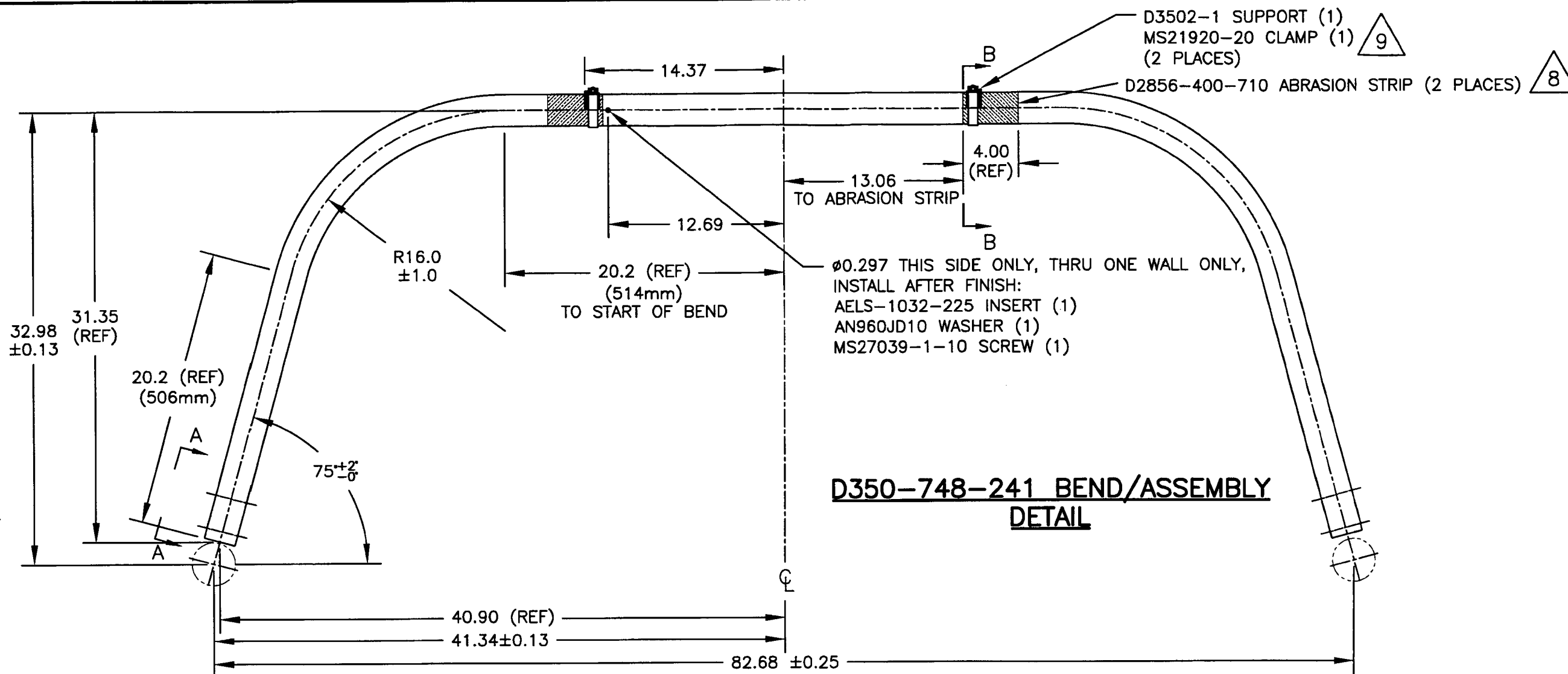
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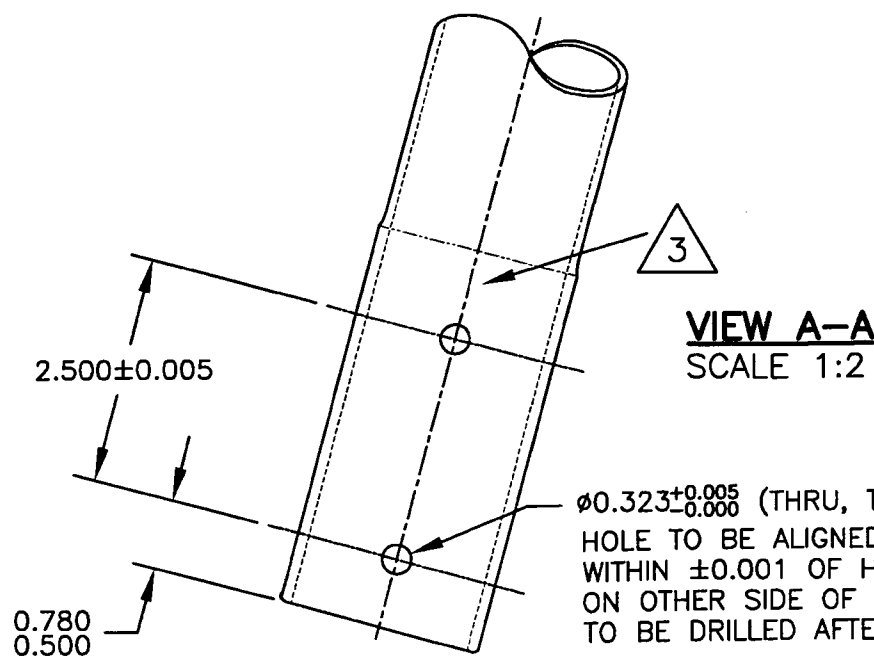
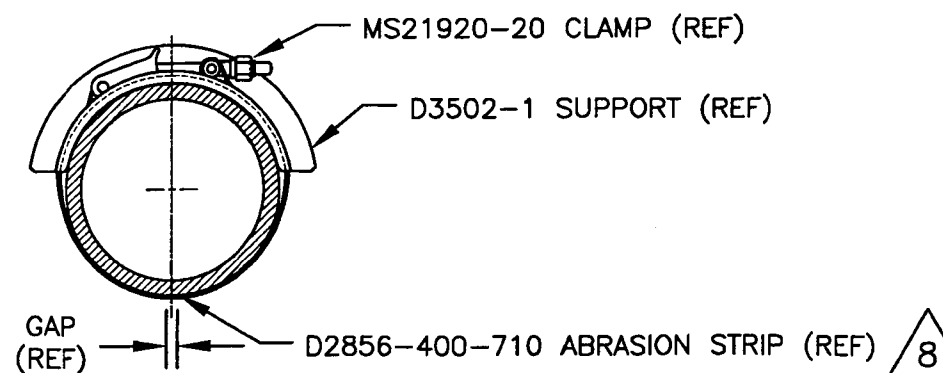
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**D350-748-241 BEND/ASSEMBLY  
DETAIL**

**SECTION B-B  
SCALE 1:2**

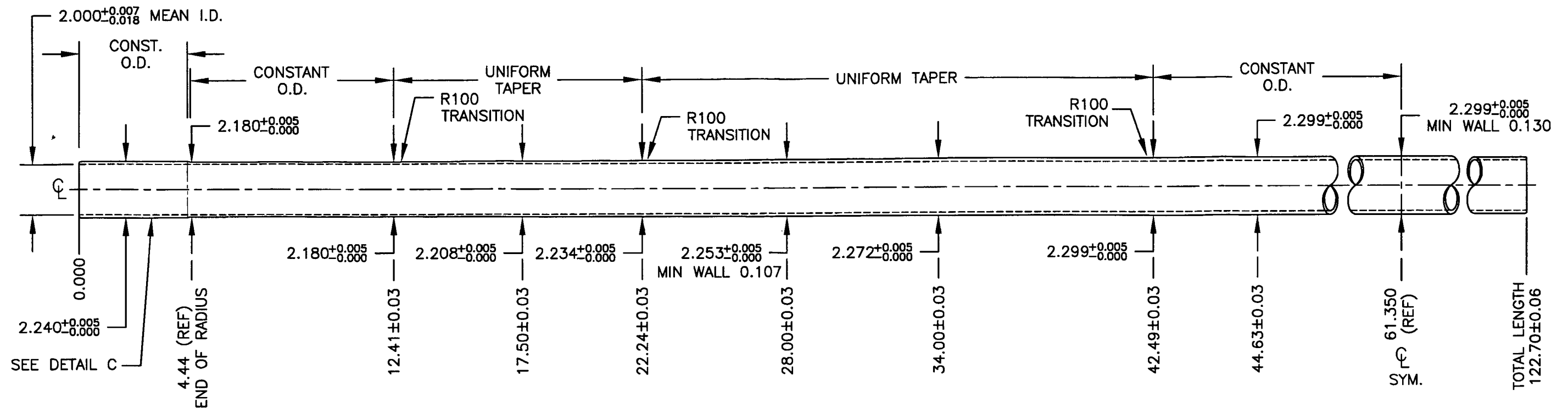


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OK 07.21.22

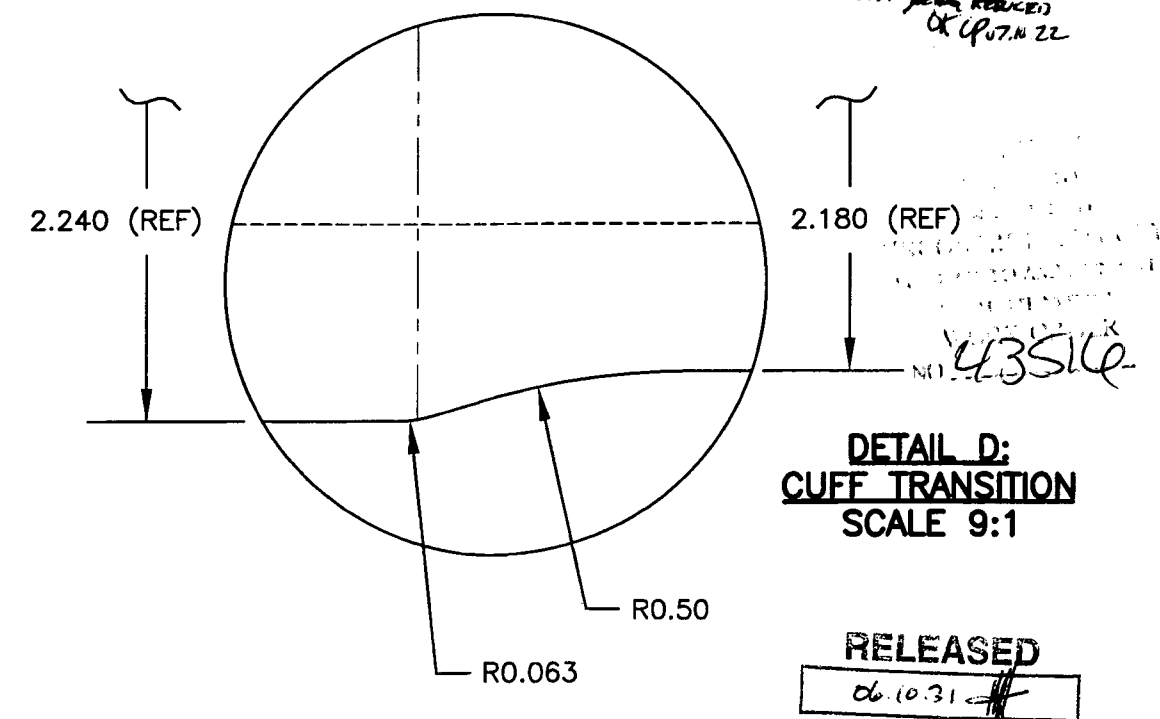
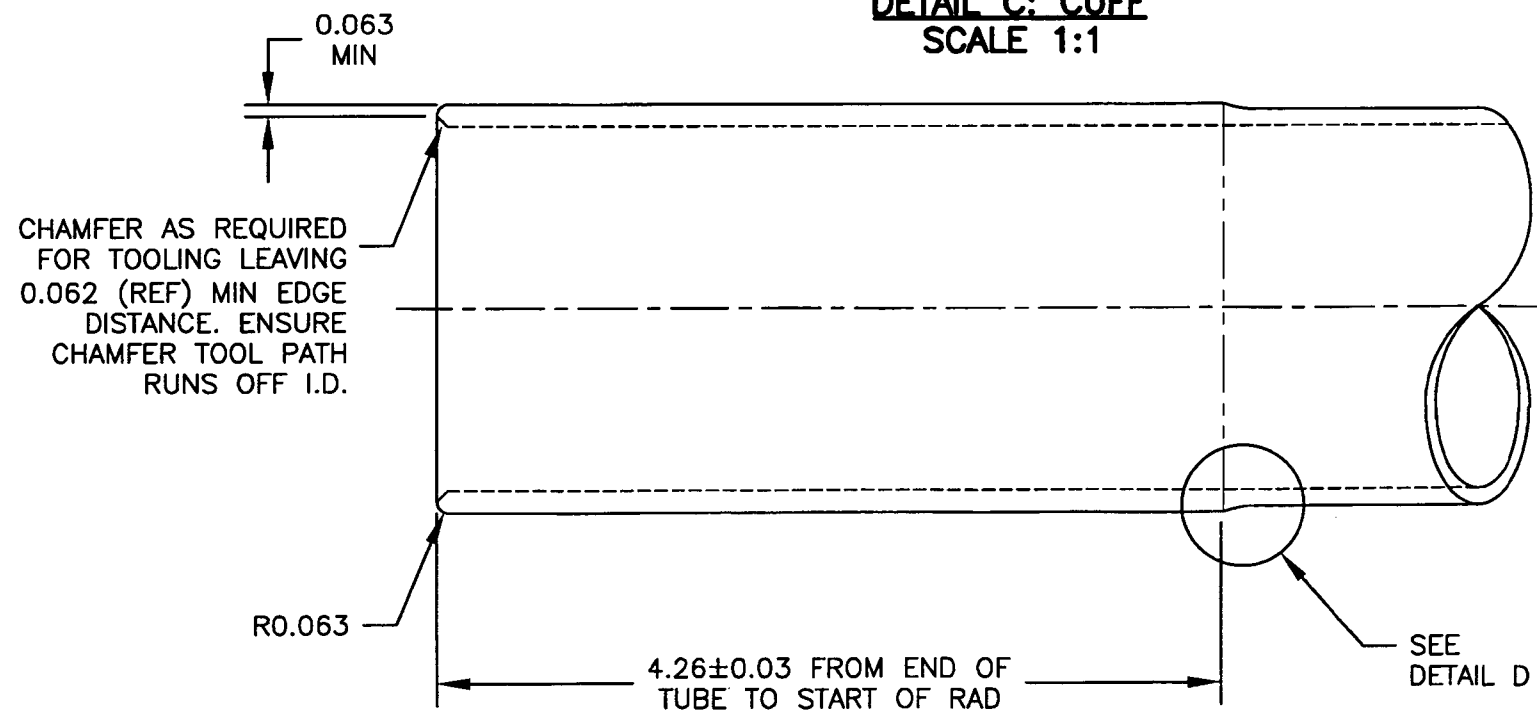
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		DATE	06.10.31	TITLE		D350-748-241	SHEET 2 OF 3
				CROSSTUBE (AS 350/355 HI AFT)		SCALE	1:8



### D350-748-241 MACHINING DETAIL

**DETAIL C: CUFF**  
SCALE 1:1



**UNDER REVIEW**  
07.02/16  
CUFF FOR REDUCED  
07.07.22

**DETAIL D:  
CUFF TRANSITION**  
SCALE 9:1

**RELEASED**  
06.10.31

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DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT)		SCALE 1:4	

